



2. (Cancelled) The apparatus of claim 1, wherein the target comprises a material that retains magnetic properties when deposited on the surface of a substrate.
3. (Cancelled) The apparatus of claim 2, wherein the target is separated from the substrate support by a distance of at least about 50 mm.
5. (Cancelled) The apparatus of claim 3, wherein the target comprises a nickel/iron alloy.
6. (Cancelled) The apparatus of claim 1 wherein the target and the substrate supporting surface are separated by a distance of at least about 50 mm.
15. (Cancelled) A method for depositing a magnetic film within a sputtering chamber containing a target and a substrate, comprising:
sputtering the target onto a surface of the substrate at a pressure less than about 15 mTorr;
collimating sputtering of the target with a grounded collimator disposed between the target and the substrate; and
generating a magnetic field that is substantially parallel to the surface of the substrate during sputtering using an annular magnet array concentrically disposed about the surface of the substrate within the sputtering chamber.
16. (Cancelled) The method of claim 15, wherein the sputtering occurs at a chamber pressure less than about 5 mTorr.
18. (Cancelled) The method of claim 16, wherein the target and the surface of the substrate are maintained at a distance of at least about 50 mm during sputtering.
19. (Cancelled) The method of claim 18, wherein the target comprises a Ni/Fe alloy.

20. (Cancelled) The method of claim 19, wherein the grounded collimator removes charges from target particles and reduces interference with the parallel magnetic field.

Please add the following new claims:

21. An apparatus for depositing a magnetic film, comprising:
a sputtering chamber containing a target, a substrate support having a substrate surface that is separated from the target, and a grounded collimator positioned between the target and the substrate support; and

an annular magnet array disposed within the sputtering chamber, the annular magnet array being configured to form a magnetic field that is substantially parallel to the substrate surface of the substrate support, the annular magnet array being concentrically positioned around an outer perimeter of the substrate surface of the substrate support.

22. The apparatus of claim 21, wherein the target comprises a material that retains magnetic properties when deposited on the surface of a substrate.

23. The apparatus of claim 22, wherein the target is separated from the substrate support by a distance of at least about 50 mm.

24. The apparatus of claim 21, wherein the annular magnet array comprises a plurality of magnetic segments positioned in an annular configuration around the perimeter of the substrate support, the plurality of magnetic segments having different magnetic orientations that cooperatively combine to magnetic field that is parallel to the substrate surface.

25. The apparatus of claim 23, wherein the target comprises a nickel/iron alloy.